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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/582,983	01/05/2007	Yuichi Kawano	0965-0472PUS1	8160

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BIRCH STEWART KOLASCH & BIRCH  
PO BOX 747  
FALLS CHURCH, VA 22040-0747

EXAMINER
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BERNARD, VIJI

ART UNIT	PAPER NUMBER
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1763

NOTIFICATION DATE	DELIVERY MODE
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06/28/2007

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

## Office Action Summary

**Application No.**

10/582,983

**Applicant(s)**

KAWANO ET AL.

**Examiner**

Viji N. Bernard

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 May 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/15/2006</u>   | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

***Election/Restrictions***

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 1-2, 5-6, 10-12 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No: 5,529,632 to Katayama et al.**

***Regarding Claim 1***, Referring to (Fig.-2) Katayama et al teach that a plasma processing apparatus (20), comprising: gas supply (16b) means for supplying a gas including a reactant gas to an interior of a chamber (13); pressure control means for controlling an internal pressure of the chamber (Col. 3, Line 58-61, Col. 4, Line 20-23, Col.6, Line 44-45 teach that the interior of the reaction chamber (13) is set to be under relatively low pressure or set to have a desired pressure, here pressure control is not shown but the pressure is set (Col.7, Line 18)); plasma generation means for generating a plasma of the gas in the interior of the chamber (Col.5, Line 65-67, Col. 6, Line 1-4 and Line 38-56); and a susceptor (15, sample stage), installed in a lower portion of the interior of the chamber, for supporting a substrate (S) to be processed (Col. 5, Line 40-51), and further comprising a wall surface protecting member (22, adhesion preventing member, 23, cylinder, 24, reflecting plate, provided in the interior of the chamber, for preventing adhesion of a plasma processing-associated product onto an inner wall surface

of the chamber (Col. 6, Line 5-24).

**Regarding Claim 2**, Referring to (Fig.-2) Katayama et al teach that the wall surface protecting member is an inner cylinder (23) covering the inner wall surface of the chamber which is located above the susceptor (15).

**Regarding Claim 5, 6**, Referring to (Fig.-2) Katayama et al teach that the wall surface protecting member is made of a metal and the metal is aluminum (Col. 6, Line 5-13).

**Regarding Claim 10**, Referring to (Fig.-2) Katayama et al teach that a heat insulator (12, 12a, 12b) is provided between the wall surface protecting member and the chamber (Col. 5, Line 52-65).

**Regarding Claim 11**, Referring to (Fig.-2) Katayama et al teach that heating means for heating a wall surface of the chamber (Col. 5, Line 52-65).

**Regarding Claim 12**, Referring to (Fig.-2) Katayama et al teach that the heating means heats the wall surface of the chamber to 100°C or higher (Col 5, Line 62-65, Col.7, Line 18).

**Claims 1-2, 4-6, 11-12 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No: 5,874,012 to Kanai et al.**

**Regarding Claim 1**, Referring to (Fig.-1) Kanai et al teach that a plasma processing apparatus, comprising: gas supply (15,16) means for supplying a gas including a reactant gas to an interior of a chamber (4); pressure control (17, 18, 19, 20) means for controlling an internal pressure of the chamber (Col. 5, Line 2-8); plasma generation means for generating a plasma of the gas in the interior of the chamber (4);

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and a susceptor (10), installed in a lower portion of the interior of the chamber, for supporting a substrate (11) to be processed, and further comprising a wall surface protecting member (6), provided in the interior of the chamber, for preventing adhesion of a plasma processing-associated product onto an inner wall surface of the chamber (Col. 4, Line 35-67, Col. 5, Line 1-29).

**Regarding Claim 2**, Referring to (Fig.-1) Kanai et al teach that the wall surface protecting member is an inner cylinder (6) covering the inner wall surface of the chamber which is located above the susceptor (10).

**Regarding Claim 4**, Referring to (Fig.-1) Kanai et al teach that the wall surface protecting member is made of a ceramic (Col. 4, Line 49-51).

**Regarding Claim 5, 6**, Referring to (Fig.-1) Kanai et al teach that the wall surface protecting member is made of a metal and the metal is aluminum (Col. 6, Line 57-65).

**Regarding Claim 11**, Referring to (Fig.-1) Kanai et al teach that heating means for heating a wall surface of the chamber (Col. 5, Line 13-20).

**Regarding Claim 12**, Referring to (Fig.-1) Kanai et al teach that the heating means heats the wall surface of the chamber to 100°C or higher (Col 5, Line 15-20, Col 6, Line 1-6).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary

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skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S.**

**Patent No: 5,529,632 to Katayama et al in view of 08-185997 to Kyoko et al.**

***Regarding Claim 3***, Referring to (*Fig.-2*) Katayama et al teach that the apparatus of the invention substantially as claimed.

But Katayama et al fail to teach that the wall the wall surface protecting member is supported on the chamber by point contact.

However, Kyoko et al teach that the wall surface protecting member is supported on the chamber by point contact (Page 3, Paragraph 0017 teach that the top-face section of the adhesion-proof cylinder (7) is contacting the inner side of upper wall of the chamber by a small projection) for the purpose of fixing the adhesion-proof cylinder to inner side of upper wall of the chamber.

Thus, it would have been obvious to one of ordinary skill in the art at the time applicant's claimed invention was made to have provided the wall surface protecting member is supported on the chamber by point contact in Katayama et al in order to

fixing the adhesion-proof cylinder to inner side of upper wall of the chamber as taught by Kyoko et al.

**Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No: 5,529,632 to Katayama et al in view of JP2002222767A to Shibazaki.**

*Regarding Claims 7, 8*, Referring to (Fig.-2) Katayama et al teach that the apparatus of the invention substantially as claimed.

But Katayama et al fail to teach that the wall surface protecting member has a surface oxidized and roughened.

However, Shibazaki teach that the wall surface protecting member has a surface oxidized and roughened for the purpose of suppressing the generation of particles within a vacuum chamber and does not deteriorate the degree of vacuum in the vacuum device (Abstract, Drawings 1-3).

Thus, it would have been obvious to one of ordinary skill in the art at the time applicant's claimed invention was made to have provided wall surface protecting member with oxidized and roughened surface in Katayama et al in order to suppress the generation of particles within a vacuum chamber and does not deteriorate the degree of vacuum in the vacuum device as taught by Shibazaki.

**Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No: 5,529,632 to Katayama et al in view of 07-283143 A to Kazuo et al.**

*Regarding Claim 9*, Referring to (Fig.-2) Katayama et al teach that the apparatus of the invention substantially as claimed.

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But Katayama et al fail to teach that the gas supply means is installed while passing through a hole provided in the wall surface protecting member.

However, Kazuo et al teach that the gas supply (8, 9) means is installed while passing through a hole/opening provided in the wall surface protecting member (7b, 71a, 71b) (See Drawing-3) for the purpose of producing plasma in the plasma production room (1) and the hole/opening is for inserting the reactant gas installation tube and come to the center section of the plasma production room (Page 4, Paragraph 0017, Page 7, Paragraph 0038).

Thus, it would have been obvious to one of ordinary skill in the art at the time applicant's claimed invention was made to have provided the gas supply means is installed while passing through a hole provided in the wall surface protecting member in Katayama et al in order to produce plasma in the plasma production room and the hole/opening is for inserting the reactant gas installation tube and come to the center section of the plasma production room as taught by Kazuo et al.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Viji N. Bernard whose telephone number is 571-272-6425. The examiner can normally be reached on Mon-Fri 8:30-5:00.

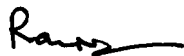
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571-272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Viji Bernard  
Examiner  
Art Unit 1763



Ram Kackar  
Primary Examiner  
Art Unit 1763